CLAIMS

What is claimed is:

1. An improved rectangular brilliant-cut diamond comprising a rectangular columnar girdle, a crown having an octagonal table facet on a top of the crown and formed above the girdle and a pavilion below the girdle,

wherein the rectangular columnar girdle has an upper rectangular cross section parallel to the table facet at a boundary between the girdle and the crown,

the crown comprises four trapezoidal crown girdle facets, four lower triangular bezel facets, four upper triangular bezel facets, four second triangular bezel facets and eight triangular star facets on an outer surrounding surface of the crown,

the table facet having four first vertexes and four second vertexes, each of the four first vertexes being located adjacent to each of four vertexes of the upper cross section of the girdle and each of the four second vertexes being at a point displaced in a direction opposite to a line (hereinafter referred to as "center line") vertical to the table facet from a center point between the two neighboring first vertexes,

the four crown girdle facets and the four lower bezel facets being aligned alternately to form a row along and above the boundary,

the four crown girdle facets each having a base coinciding with a side of the upper cross section of the girdle and

the lower bezel facets each having a vertex, two sides passing the vertex and a base opposite to the vertex, the vertex coinciding with each of the vertexes of the upper cross section of the girdle and jointly owned by two crown girdle facets on both sides of each of the lower bezel facets, the two sides each coinciding with a side of each of the two crown girdle facets and the base having two ends each coinciding with a vertex owned by each of the two crown girdle facets,

the four upper bezel facets, the four second bezel facets and the eight star facets being aligned to form another row between the table facet and the row having the crown girdle facets and the lower bezel facets, the upper bezel facets each having a vertex coinciding with one of the first vertexes of the table facet and a base coinciding with the base of the lower bezel facets,

the lower bezel facets each having an angle with the table facet larger than an angle between each of upper bezel facets and the table facet, and

the pavilion comprises four rectangular pavilion main facets and a plurality of triangular pavilion girdle facets on an outer surrounding surface of the pavilion,

the pavilion main facets each having two opposite vertexes, one of which is a lower apex of the diamond on the center line and the other of which coincides with each of lower vertexes of the girdle, and two sides each coinciding with a side owned by a neighboring pavilion main facet on a plane (hereinafter referred to as "center dividing plane") passing both the center line and a center between two neighboring lower vertexes of the girdle.

2. An improved rectangular brilliant-cut diamond as set forth in claim 1, wherein the angle between the lower bezel facet and the table facet is 23 to 26 degrees, the angle between the upper bezel facet and the table facet is smaller than the angle between the lower bezel facet and the table facet and 13 to 25 degrees, and the pavilion main facet is at an angle of 38 to 42 degrees with the table facet.

3. An improved rectangular brilliant-cut diamond as set forth in claim 1, wherein the pavilion comprises four triangular pavilion girdle facets, each of which has a base coinciding with a connecting line between the two neighboring lower vertexes of the girdle and a vertex opposite to the base on the center dividing plane crossing the base,

one of the pavilion main facets and a pavilion girdle facet adjacent to the pavilion main facet jointly owning a vertex coinciding with one of the lower vertexes of the girdle,

the pavilion main facet having a side passing the co-owned vertex and an end on the same center dividing plane, the pavilion girdle facet adjacent to the pavilion main facet having a side passing the co-owned vertex and another end on the same center dividing plane,

wherein between the side of the pavilion main facet and the side of the pavilion girdle facet adjacent to the pavilion main facet, the pavilion has at least two triangular facets, owning the co-owned vertex, divided into by at least one neighboring boundary line passing the co-owned vertex and an end on the same center dividing plane.

4. An improved rectangular brilliant-cut diamond as set forth in claim 3,

wherein the pavilion has one boundary line passing the co-owned vertex of the girdle and the other end on the same center dividing plane to have two triangular facets, owning the co-owned vertex, divided into by the neighboring boundary line between the side of the pavilion main facet and the side of the pavilion girdle facet adjacent to the pavilion main facet.

5. An improved rectangular brilliant-cut diamond as set forth in claim 3,

wherein the angle between the lower bezel facet and the table facet is 23 to 26 degrees, the angle between the upper bezel facet and the table facet is smaller than the angle between the lower bezel facet and the table facet and 13 to 25 degrees, and the pavilion main facet is at an angle of 38 to 42 degrees with the table facet.

6. An improved rectangular brilliant-cut diamond as set forth in claim 3,

wherein, assuming that the center line stands at the origin (0, 0) of x, y-coordinates and that one of the girdle lower vertexes is at (2, 2) of the x, y-coordinates,

the first vertex, adjacent to the girdle lower vertex, of the table facet is at (0.7 to 1.2, 0.7 to 1.2) of the x, y-coordinates,

the three lines closest to the center line among the side of the pavilion main facet, the side of the pavilion girdle facet, and the boundary lines between the side of the pavilion main facet and the side of the pavilion girdle facet adjacent to the pavilion main facet cross the center dividing plane at points closer to the origin than x-coordinate of the first vertex of the table facet, and the second vertex of the table facet is at x-coordinate of 1.3 to 1.6.

7. An improved rectangular brilliant-cut diamond as set forth in claim 1,
wherein the pavilion comprises eight triangular pavilion girdle facets, each of which has a vertex on a crossing line between a girdle side facet and a center dividing plane crossing the girdle side facet, another vertex coinciding with a lower vertex of the girdle side facet, and a separated vertex on the center dividing plane,

> each of the pavilion girdle facets having a side co-owned on the center dividing plane with a neighboring pavilion girdle facet that has a vertex coinciding with another lower vertex of the same girdle side facet,
>
> the two neighboring pavilion girdle facets having such an angle therebetween that the co-owned side on the center dividing plane forms a ridge therebetween,
>
> one of the pavilion main facets and a pavilion girdle facet adjacent to the pavilion main facet jointly owning a vertex coinciding with one of the lower vertexes of the girdle,
>
> the pavilion main facet having a side passing the co-owned vertex and an end on the same center dividing plane,
>
> the pavilion girdle facet adjacent to the pavilion main facet having a side passing the co-owned vertex and another end on the same center dividing plane,

wherein between the side of the pavilion main facet and the side of the pavilion girdle facet adjacent to the pavilion main facet, the pavilion has at least two triangular facets, owning the co-owned vertex, divided into by at least one neighboring boundary line passing the co-owned vertex and further another end on the same center dividing plane.

8. An improved rectangular brilliant-cut diamond as set forth in claim 7,
wherein the pavilion has one boundary line passing the co-owned vertex of the girdle and the other end on the same center dividing plane to have two triangular facets, owning the co-owned vertex, divided into by the neighboring boundary line between the side of the pavilion main facet and the side of the pavilion girdle facet adjacent to the pavilion main

facet.

9. An improved rectangular brilliant-cut diamond as set forth in claim 7, wherein the angle between the lower bezel facet and the table facet is 23 to 26 degrees, the angle between the upper bezel facet and the table facet is smaller than the angle between the lower bezel facet and the table facet and 13 to 25 degrees, and the pavilion main facet is at an angle of 38 to 42 degrees with the table facet.

10. An improved rectangular brilliant-cut diamond as set forth in claim 7,
wherein, assuming that the center line stands at the origin (0, 0) of x, y-coordinates and that one of the girdle lower vertexes is at (2, 2) of the x, y-coordinates,
the first vertex, adjacent to the girdle lower vertex, of the table facet is at (0.7 to 1.2, 0.7 to 1.2) of the x, y-coordinates,
the three lines closest to the center line among the side of the pavilion main facet, the side of the pavilion girdle facet, and the boundary lines between the side of the pavilion main facet and the side of the pavilion girdle facet adjacent to the pavilion main facet cross the center dividing plane at points closer to the origin than x-coordinate of the first vertex of the table facet, and the second vertex of the table facet is at x-coordinate of 1.3 to 1.6.